

REMARKS

Claims 1, 2 and 4-24 are in the present application. Claims 1, 4, 5, and 22 are currently amended, claims 23 and 24 are newly added, and claim 3 is canceled,

Applicant and Applicant's attorney representatives wish to express with appreciation the telephone interview with the Examiner conducted on March 10, 2004. Examiner Kik was kind enough to discuss the pending claims and the cited references in an effort to advance prosecution of the present application.

Pursuant the telephone interview, as summarized in the Telephone Interview Summary dated March 10, 2004, agreement was reached regarding the references of record. In particular, agreement was reached and the Office acknowledged that the amended claims submitted herewith overcome the cited and relied upon Cirit reference and rejections of record. Applicant acknowledges the Office's right to conduct a search in view of the amendments and RCE submitted herewith.

Figures 2 through 9 are replaced by the Replacement Sheets submitted herewith. The Replacement Sheets overcome the informalities previously cited the Draftsperson's Review. Accordingly, it is respectfully requested that the objection of the drawings be reconsidered and withdrawn.

Claims 1-2, 12, 13, and 17-22 were rejected in the under 35 USC 102(e) as being anticipated by Cirit. This rejection is traversed.

Applicant's arguments of record are incorporated herein by reference.

Regarding the Office Action's Remarks to the previously filed Response dated October 9, 2003, Applicant notes the Office Action's statement that

"[A]lthough the Examiner agrees that the method of Cirit uses cell replacements, this reduction in the number of cells for the implementation of the IC design is also part of the selection process." Applicant finds no factual or logical support for this statement in the cited and relied upon Cirit.

It is first noted that Cirit, as acknowledged by the Office Action (i.e., admitted) uses "replacement cells". That is, an original cell is *replaced* by another cell from a "special cell library having the property of constant replacement delays". (See Cirit, col. 2, ln. 65- col. 3, ln. 1) There is thus a one-to-one replacement of the original cell by the cell from the special library. Further support that an original cell is replaced by another cell may be found throughout the Cirit disclosure, including at col. 3, ln. 59-64, col. 4, ln. 11-14, col. 4, ln. 20-28, and col. 4, ln. 61-67. At each of the foregoing citations, the Cirit discloses the original cell is *replaced* by another cell.

There is no selection process disclosed in Cirit that considers, contemplates, or even appreciates reducing the number of cells (as claimed by Applicants). Again, the sole focus of Cirit is timing optimization. There is no disclosure or suggestion that the number of distinct IC logic cells for implementing the IC design be reduced is a consideration, objective, or selection process criteria of the Cirit system and method.

Contrary to Applicants' claimed method and medium, reducing the number of distinct IC logic cells for implementing the IC design, as suggested by the Office Action, teaches away from the explicit and repeated teachings of Cirit wherein the original cell is *replaced* by a cell from the special library of constant delay cells. Thus, the alleged disclosure of Cirit is clearly not support by the disclosure provided by Cirit.

Furthermore, it cannot be said that the alleged reduction of cells is inherently disclosed by Cirit since the reduction of the number of distinct IC logic cells is not a requirement for the disclosed Cirit system and method.

Moreover, the determining of the implementation of the IC design based on the claimed reduction in the number of distinct cells and the claimed design constraints is not seen in Cirit.

Therefore, Cirit neither explicitly discloses, suggests, or inherently discloses reducing the number of distinct IC logic cells for implementing the IC design.

Also, claims 1 and 22 have been amended to clarify that which Applicants consider their patentable invention. In particular, Applicants have amended claims 1 and 22 to clarify that the distinct number of IC logic cells generated for implementing the IC design have a new functionality that is not present in a pre-existing library used to implement the IC design. This claimed aspect of the claimed method and medium is also not disclosed (or suggested) by the cited and relied upon Cirit.

Cirit does not disclose (or suggest) generating IC logic cells that have new functionality not present in a pre-existing library used to implement the IC design. Instead, Cirit discloses “replacing a particular cell with another cell from the same family”. (See Cirit, col. 3, ln. 59-61) As explicitly stated and defined therein, Cirit states, “A set of logic cells is called a “family” if each member implements the same logic function”. (See Cirit, col. 3, ln. 3-5) Therefore, it is clear that Cirit replaces a particular cell with a cell having the same functionality. Accordingly, Cirit does not disclose determining an implementation of the cell based on the functional description and the design constraint, wherein the distinct IC logic cells generated for implementing the IC design have a new functionality, as claimed by Applicants.

Therefore, it is respectfully submitted that claims 1 and 22 are not anticipated by Cirit under 35 USC 102(e).

Claims 2, 12, and 13 depend from claim 1. Applicant respectfully submits that claims 2, 12, and 13 are patentable over Cirit under 35 USC 102(e) for at least the reasons stated above regarding claims 1 and 22.

Regarding claim 3, it is noted that claim 3 is canceled. Thus, the rejection of claim 3 is moot.

Inasmuch as the rejection of the previous claim 3 is applicable to the currently amended claim 5 that includes aspects of the previous claims 3 and 5, it is respectfully submitted that the claimed evaluating of the signature based on the functional description and the constraint of the cell against a signature of an existing cell to determine a possible match therewith and the matching disclosed by Cirit are not the same or even analogous to each other. According to Cirit, "match" clearly refers to a cell "electrically appropriate for the load at the output of the cell". (See Cirit, col. 8, ln. 16). This definition is consistent with match as used throughout Cirit.

Moreover, the constraints considered by Cirit are not the same as those claimed by Applicants. Applicant discloses the claimed matching as an equivalence/compatibility of the functionality and constraint of the cell. Applicant's specification states, "in addition to functionality, the target for matching is annotated with constraints that preferably relate to the target design's use in a design environment." (See Specification, p. 8, ln. 27 - p.9, ln 3) Also, a signature for the cell based on the functional description and the constraint is determined and used as a basis of the matching. Cirit fails to disclose any matching that is based on the equivalence/compatibility of functionality,

constraints, and a signature based on the functional description and the constraint of the cell.

Thus, it should be clear that the matching of Cirit and the claimed matching of claim 5 are not the same. Cirit fails to disclose or suggest matching the functionality, constraints, and signature of the replacement cells to the original cells but instead discloses matching the electrical characteristics to obtain proper delay characteristics (i.e., functionality alone). Accordingly, it is respectfully requested that the rejection of claim 5 under 35 USC 102(e) be reconsidered and withdrawn.

Regarding claims 17-21, Applicants maintain that claim 17 includes the recitation of characterizing partitions of the IC design at a transistor level. Claims 18-21 depend from claim 17. Despite the Office Action's specific citation to Cirit at col. 7, ln. 45 - col. 8, ln.12, there does not appear to be any disclosure in Cirit of transistor level partitioning of the IC design. Applicant respectfully submits that Cirit does not explicitly disclose partitioning at the transistor level. Furthermore, claims 17-21 depend from claim 1.

Accordingly, Applicants respectfully request the reconsideration and withdrawal of the 35 USC 102(e) rejection of claims 1-3, 12, 13, and 17-22, as well as the allowance of claims 1-3, 12, 13, and 17-22.

Claims 4-11 and 14-16 were rejected under 35 USC 103(a) as being unpatentable over Cirit in view of Touzet. This rejection is traversed.

Regarding the rejection of claims 4, 5, 8, and 9, it is noted that the rejection relies on the alleged disclosure of all of the elements of the previous (now canceled) claim 3 by Cirit.

Claims 4, 5, 8, and 9 depend either directly or indirectly from claim 1. As discussed in detail above, Cirit does **not** disclose or suggest all of the claimed elements of independent base claim 1. Accordingly, the citation to and reliance on secondary reference Touzet for the use of a signature determination combined with Cirit fails to render Applicant's claims 4, 5, 8, and 9 obvious. It is further noted that the claimed signature of the cell is based on the functionality and the constraint of the cell.

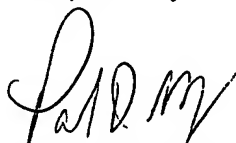
Regarding the rejection of claims 6, 7, and 14-16, it is highlighted that the rejection relies on the alleged disclosure of all of the elements of claim 1 and 12 by Cirit. As discussed in detail above, Cirit does not disclose or suggest all of the claimed elements of claims 1 and 12. Accordingly, the citation to and reliance on secondary reference Touzet for teaching determining of at least one input permutation or one possible input complement combined with Cirit fails to render Applicant's claims 6, 7, and 14-16 obvious.

The rejection of claims 10 and 11 are traversed on the same basis as claim 4 above. Claims 10 and 11 depend on claim 9 that in turn depends from 4 that is dependent on claim 1. Claims 10 and 11 are not obvious under 35 USC over Cirit in view of Touzet at least since claim 1 is patentable over Cirit and Touzet as discussed hereinabove.

In summary, it is respectfully submitted for the reasons set forth above, that this amendment places the application in condition for allowance. Accordingly, it is respectfully requested that claims 1-24 be allowed and the application be passed to issue.

Respectfully Submitted,

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